**Technology Services**
**2004 Annual Report**

Technology Services is responsible for the planning, implementation, use and support of technology and telecommunications to achieve municipal and school administrative goals. Its activities are geared toward maintaining a stable, up to date network, software applications and user environment and enabling user productivity by streamlining processes through computerization. The beneficiaries include over 400 internal users in every town department; school users of the financial/payroll system and every school and town user with a telephone on the desktop along with our residents and visitors to our web site.

A total of 354 PCs are networked to 24 servers across 26 town buildings via a municipal fiber institutional network with cable backup supporting close to 600 different software applications to achieve these goals. Although the number of users and PCs has remained constant, the number of servers supported has doubled along with the number of networked town locations. With the continual expansion of on-line web services such as streaming video broadcasts of public meetings, property and permit inquiries and citizen web requests, the user base of external customers continues to grow.

In 2004, we had over 100,000 visitors to our website. Every permit, license, decision and review in the Town's permits database dating back to 1949 is available in real time on the Town's web site. Permit inquiries average approximately 15,000 annually while inquiries for property information average over 75,000. Our streaming video application averages over 250 viewers per month.
Each one of these saves a citizen or business a phone call or visit to a Town office to get this information.

Technology Services budgets the following programs: Network, MIS, Public Safety, Database, Voice, Web & Office Services and User Services. Each program is staffed by one FTE working manager and annual goals are established and monitored for each program throughout the year. Through careful project planning each area has a track record of successful achievement that continues to build on past successes. Notable achievements include the successful conversion and ongoing maintenance of a school/town financial management and human resource system; over 99.9% network uptime during normal work hours; considerable in-house enhancement of the Police and Fire systems; the implementation of a centralized permitting system with web enabled inquiry capabilities; and a top ranked municipal website with on-line citizen request service, streaming video broadcasts and property inquiry; and the completion of over 90% of user Help Desk (software/hardware) calls within the same day.

In 2004, the Town of Framingham changed the domain name of its official website to www.FraminghamMA.gov to provide better name recognition to our role in local government. (The use of .gov is limited to qualified government organizations and eligibility is managed by the federal General Services Administration.) Changing the domain name from .org to .gov assures our constituents that they are accessing an official government site. The .org extension will continue to be available until we complete the transition but visitors to our web site are encouraged to add our new address to their list of "Favorites".

The Internet continues to play an increasingly important role in the delivery of Town services and our accomplishments continue to be significant particularly since they have been realized with little funds and no dedicated staff or webmaster. Interestingly but not surprisingly, many of these web inquiries take place on nights and weekends extending customer service across seven days a week, twenty four hours a day.

The implementation of Town-wide integrated permitting and licensing continues to expand into its seventh year. This year Zoning Board decisions and Planning Board reviews were incorporated as Permit activity types and ZBA and Planning Board pages were created on the Town's web site to facilitate on-line searching of ZBA decisions and on-line queries of Planning Board reviews. Digital photos from the Assessor's office were also incorporated into the permit/property database, providing access to almost 1,000 images with the number of available photos increasing monthly.

Following the lead of other best of breed communities nationwide, Framingham was the first community in Massachusetts to provide streaming video broadcasts of its Town Meetings, Selectmen's meetings and other public meetings. Both real-time and archived broadcasts provided by the government access channel are available for viewing on-line.

Working with the Parks and Recreation Department, a table driven application was developed this year to enable residents to register for seasonal programs on the Town's web site saving residents a trip to Parks and Recreation and the need to stand on line. From the pilot test in the Spring through the Winter program registration, on-line registrations accounted for 169 of the applications received and over half of these were for the winter session where 15 applications were received in the first 15 minutes of availability.

Although the popularity of on-line registration is increasing despite minimal advertisement and there are several public PCs in the Library, not all slots are made available on-line in order to continue to provide opportunities for residents without

home computers or who prefer walk-in registration.

Several years ago, the Town invested in a Geographic Information System (GIS) and flyover that gathered digital photographs with which to create various data layers. The initial emphasis was to update Engineering and Assessor maps but since that time numerous data layers have been built and maintained. This year a pilot project was initiated to give the public direct access to that data by making GIS property maps available through the web site "Property Inquiry" pages.

The standard property map contains parcel outlines, buildings, road edges, driveways, water bodies, property dimensions, and the map-block-lot identifiers for the selected and neighboring properties. The maps are produced using a copy of GIS layers stored locally on the web server and a secure database inquiry link to the Permits SQL Server which provides the property attribute data (ownership, zoning, valuation, classification, sale data).

Development of a complete set of web-based interactive GIS maps is nearly complete and will be rolled out in early 2005. This web application will allow citizens to not only query property information, but also Transportation, Aerial Photos, Recreation Sites, Schools, Historic Locations, Zoning Boundaries, Neighborhoods, Voter Precincts, Trails, Digital Property Photos, and Business Information. Map capabilities include selective display of layers (parcels, buildings, water, streets, street names, rail lines, driveways, parking lots and trails), the ability to zoom in/out, and the ability to pan the map left/right and up/down.

Based on a historic decision by the Massachusetts Supreme Judicial Court, that the denial of marriage and marriage rights to same sex couples is unconstitutional under the liberty and equality provisions of the Massachusetts Constitution, the Town's Marriage Certificate application was upgraded to incorporate changes required for same sex marriages. Although the changes may seem minor, the ruling was monumental and demonstrates our ability to quickly adapt to change.

Other permits enhancements included the creation of a new "All Alcohol General" license; a new Conservation Emergency Certificate and an updated version of an Abbreviated Notice of Residential Area of Delineation (ANRAD). Regulation changes to the Fire Department's Off-Street Parking Permit and Certificate of Exemption also required updates to both permit types.

With the budget constraints and reduction in staff that have occurred in the past two fiscal years, there has been an increased dependence by town departments on computers to achieve productivity gains and compensate for staff reductions. Technology Services

staff resources and budget have focused on maintaining a stable, up to date environment and implementing a new financial/human resource, billing and collections system. In addition, maintaining a virus free environment and addressing the issues of unwanted email (SPAM) that come with the ever growing use of email as a productive form of communication and performing webmaster functions without a webmaster have become time consuming but essential tasks.

Under funded over the past few years in minor computer equipment, the town now faces the need to address the replacement of obsolete PCs, servers and monitors in order to continue to stay current with technology; add disk storage or purge valuable data and invest in software to battle security invasions.

Technology Services strives to achieve the industry standard benchmark of 99.999% uptime which translates to no more than 5 minutes of downtime per year for a given piece of equipment. In 2004 an average 99.94% server and network uptime was achieved during normal work hours across all servers and several servers had 100% availability.

Last year the significant effort required to maintain the town network virus free was discussed in the annual report. This year in addition to the effort expended in virus protection, unsolicited emails or SPAM became a major area of contention with over 55% of our incoming mail classified as SPAM. The Town installed a hardware/software device through which all inbound mail is directed before it reaches our email server. The filter utilizes a Bayesian algorithm to calculate the probability of a message being SPAM based on its contents and learns over time to distinguish SPAM from good mail, resulting in an efficient, adapting anti-spam approach. Initially, however, the process is time-consuming since rejected mail must be reviewed and legitimate mail forwarded on to the recipient.

Accomplishments in Public Safety included the development of an evidence inventory system for the Police Department to replace a typed paper card system. The project was undertaken in-house after a review of off-the-shelf products proved either too expensive or unable to meet the Police Department's functional requirements.

The new system uses permanent thermal transfer labels printed at the booking station to label evidence items with unique barcodes. PC's in the Evidence and Detective divisions are equipped with handheld barcode readers to scan the labels, Officer ID's, and a master list of evidence locations. This allows the evidence officer to check evidence items in and out without typing anything.

The system maintains a full chain of custody (where evidence went, when it went, and who took it); logs the time

and name of all record updates; implements security by officer to restrict access to record updates; contains a set of standard reports for Destroyed Evidence, Evidence out of Custody (Court, Lab, Feds), Complete Inventory, and Inventory by Storage Location; and has printed documentation for common procedures.

New Dictaphone monitoring software was installed and tested in both the Police and Fire Departments that not only automatically records all dispatched calls and radio transmissions but also provides easy replay for research purposes and the ability to email a transmission such as a fire incident to the state Fire Marshall on request. In addition, new GPS equipment was installed to enable all server times to be synchronized with the atomic clock for accurate and consistent time reporting. Fire Dispatch, Fire CAD, Police CAD and Dictaphone are now all synced to the same time to the exact second.

A Zetron interface in all Fire stations has been installed and is now working as required. This system is interfaced to the Fire CAD system to further enable accurate capture and reporting of times such as time leaving or returning to station..

New rostering software for the Fire Department (Firehouse from Affiliated Computer Systems) was installed and tested and a few changes requested. The new release is scheduled to go live in 2005.

From a planning perspective, there are several capital projects in need of consideration over the next few years including laptops in fire apparatus; replacement of ten year old public safety servers; implementation of a remote "hot site" disaster plan for the town's financials systems that incorporates server redundancy; data warehousing and management of over ten years of electronic records; wireless access for field applications; a new, uniform telephone/voice mail upgrade for municipal departments and a web redesign incorporating decentralized content management.

Included in the FY '06 Capital Budget request submitted in November, are requests to fund laptops for all ten pieces of fire apparatus and a proposal for additional disk storage.

The Police Department has had laptops in its cruisers for several years providing them with access to incident, mugshot and license plate information in the field and enabling reports to be entered directly from the cruisers. The Fire Department purchased a laptop to enable the prototyping of several field applications including access to incident, business, occupancy, mapping, inspections and hazardous material data. These applications are now ready to be deployed to all apparatus.

Managing town data has shifted from a paper management issue to an electronic one. Over the past ten years, the town has computerized virtually all its operations and its public records are now stored on-line rather than on paper making them much more accessible for department operations and research. During the past two years, the need for additional disk space has become critical and departments are routinely asked to manage their on-line files and emails. On a couple of occasions, we have actually run out of disk space.

Given the value of on-line data, the decrease in disk storage costs; and the minimal physical space requirements as compared to paper documents, it appears prudent to propose electronic data warehousing. Such a solution aggregates local server disk storage with a storage area network that supports all systems and applications and provides redundancy for disaster recovery. Due to fiscal constraints, capital funds were not available this year, however, if funding is not made available in the near future, policy decisions must be made to archive the ten years of data now on line.

To support real-time access to public safety applications as well as field access to other municipal applications such as permits, inspections and infrastructure maps, Technology Services has spent considerable time over the last two years researching and evaluating wireless access to our municipal network (I-net). Several options have fallen by the wayside during the proof of concept, demonstration phase. As an example, point to point technologies require line of site and have been found to be unsuitable given Framingham's topography. Other technologies have proved too expensive; required proprietary solutions; or could not sustain an acceptable transmission rate or provide the necessary level of security.

During this past year, mesh network technology has provided the breakthrough in wireless access that Technology Services had been looking for and several companies were invited to provide demonstration projects. Based on a successful proof of concept pilot, a two million dollar wireless broadband budget was prepared and included with other infrastructure improvement projects in a proposed capital override.

Wi-Fi, short for ***wi****reless* ***fi****delity,* is used generically to refer to any type of 802.11 network equipment. It is the standard for wireless network cards included in today's laptops. A mesh network utilizes cellular technology. Cells can be mounted on streetlights or traffic signals and communicate with each other wirelessly via a Wi-Fi mesh routing algorithm combining the extended range of cellular technology with the high bandwidth of 802.11 to create broadband data networking. The result is broader coverage, minimal installation and cabling costs, and rapid deployments requiring only power. These cells connect back to Town

servers through the municipal I-net already in place.

This year at the annual Employee Recognition Dinner, Alan Holt, Manager of Data Base Services, received a Customer Service award for his work as the quiet "guru". Alan has been instrumental in the design and implementation of several new web services whereby Framingham residents can access property and map data on line. Alan was cited for providing "easier access to information using cutting edge technology".

Susan Joyce, Manager of User Services and Carly Premo, Manager of Voice, Web and Office Services were also honored at the Employee Dinner with Employee of the Quarter awards receiving coveted reserved parking: Susan, as Employee of the 3rd Quarter and Carly as Employee of the 4th Quarter.

Susan received several nominations from Town Meeting members for her patience, grace under pressure and technical skill in putting together usable quality presentations as well as her "sterling representation of a customer-focused Town Government." Susan, who staffs the Help Desk, is also the internal "go to" person for desktop computer problems, questions and training. This is the second Customer Service award that Susan has received.

Carly Premo was chosen Employee of the 4th Quarter for her many valuable services to town employees and residents. Over the past few years, Carly has assumed more and more responsibilities as de facto webmaster for the town's website, assisting departments to ensure timely posting of material to the web. Attributes used to describe her personality and professionalism include: conscientious, productive, responsive, efficient, pleasant, helpful and committed to ensuring that our residents receive the most accurate information available as quickly as possible.

Alan, Carly and Susan join previous award recipients Jamie Schiavone and Scott Jung: an outstanding record of performance for a department of seven.

The accomplishments documented in this annual report could not have been achieved without the commitment of each and every member of our small but dedicated Technology Services staff. Once again, I thank each of them for another year of proud accomplishments.

Respectfully submitted

Kathleen F. McCarthy
Director, Technology Services